

FIG. 1

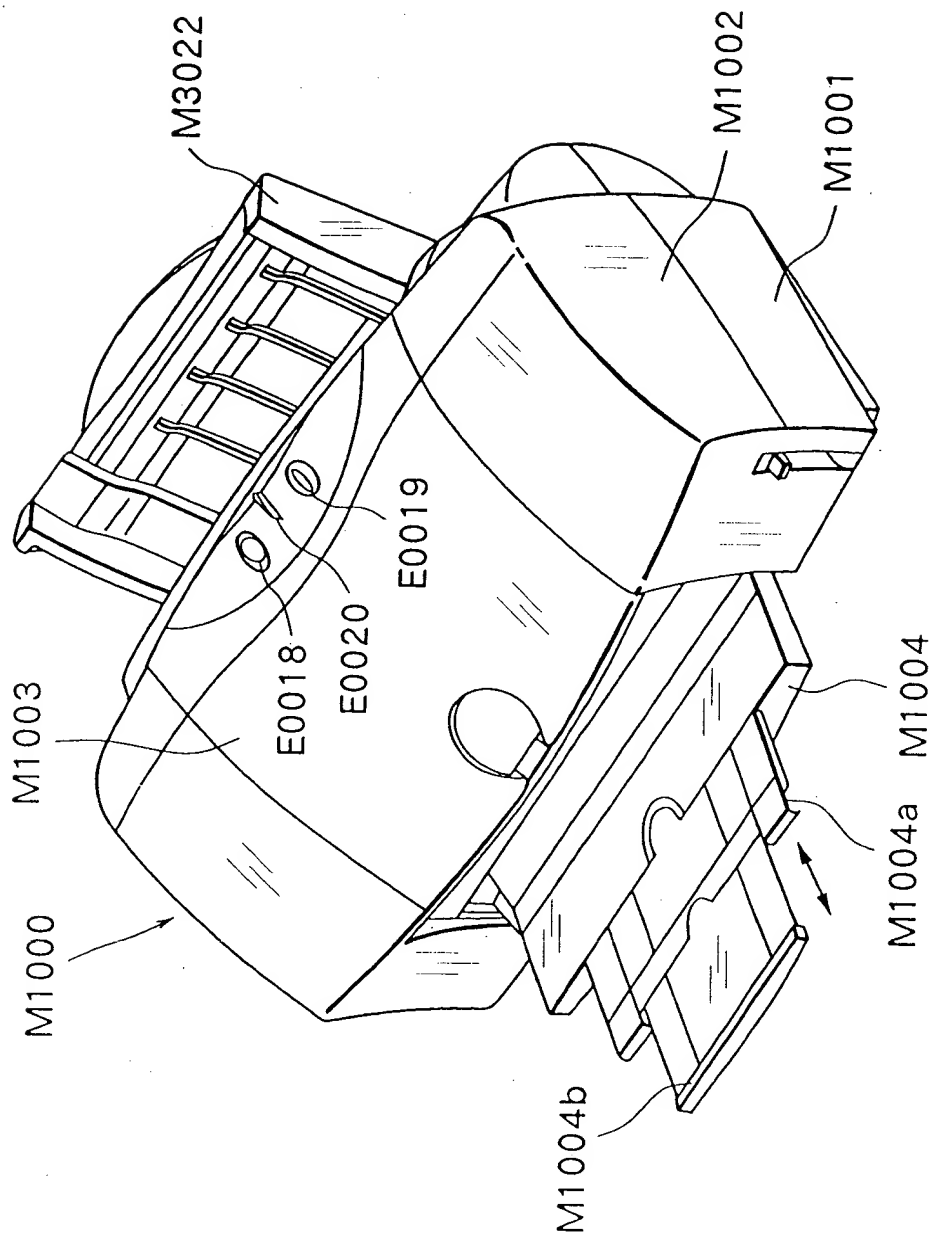


FIG. 2

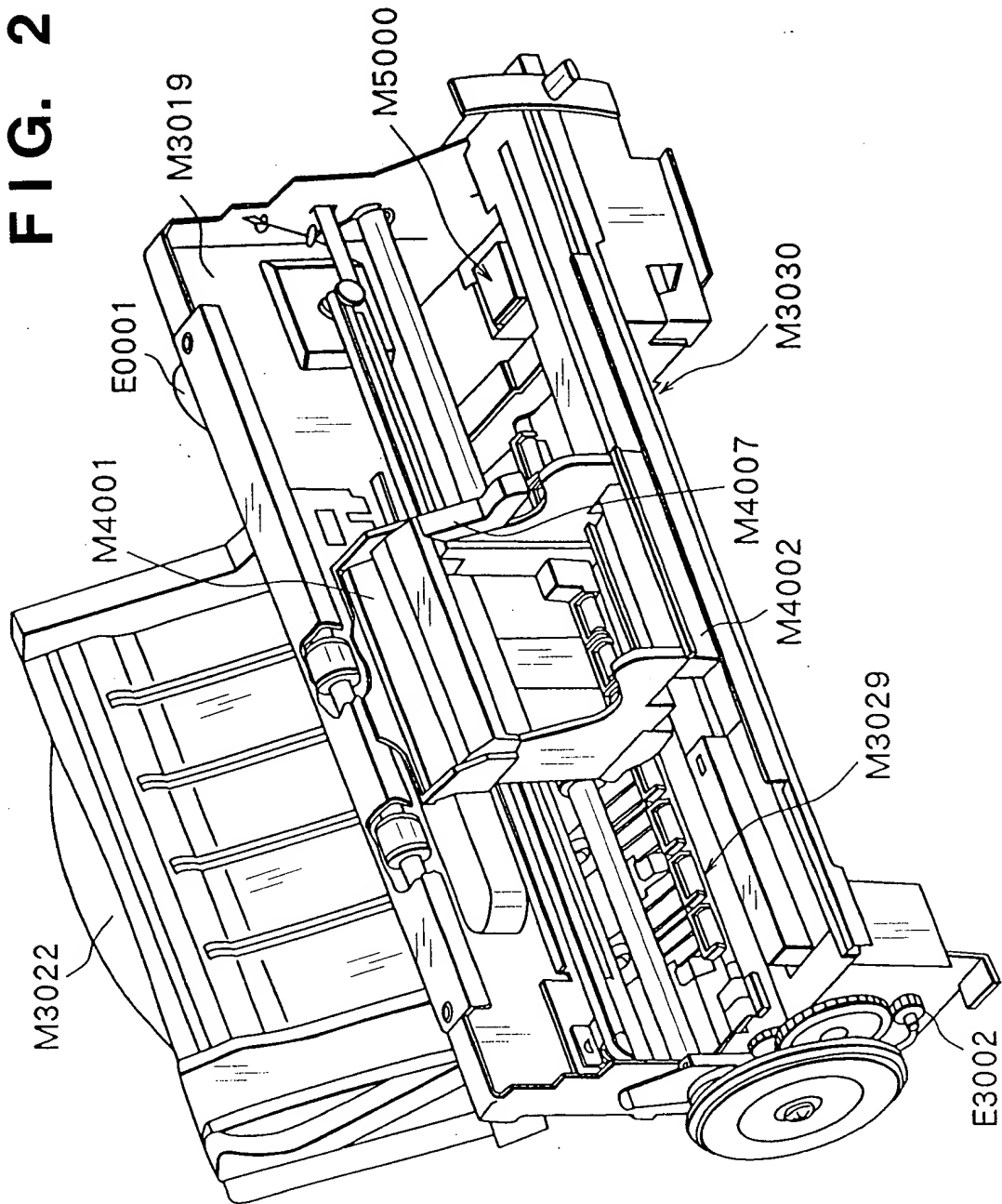
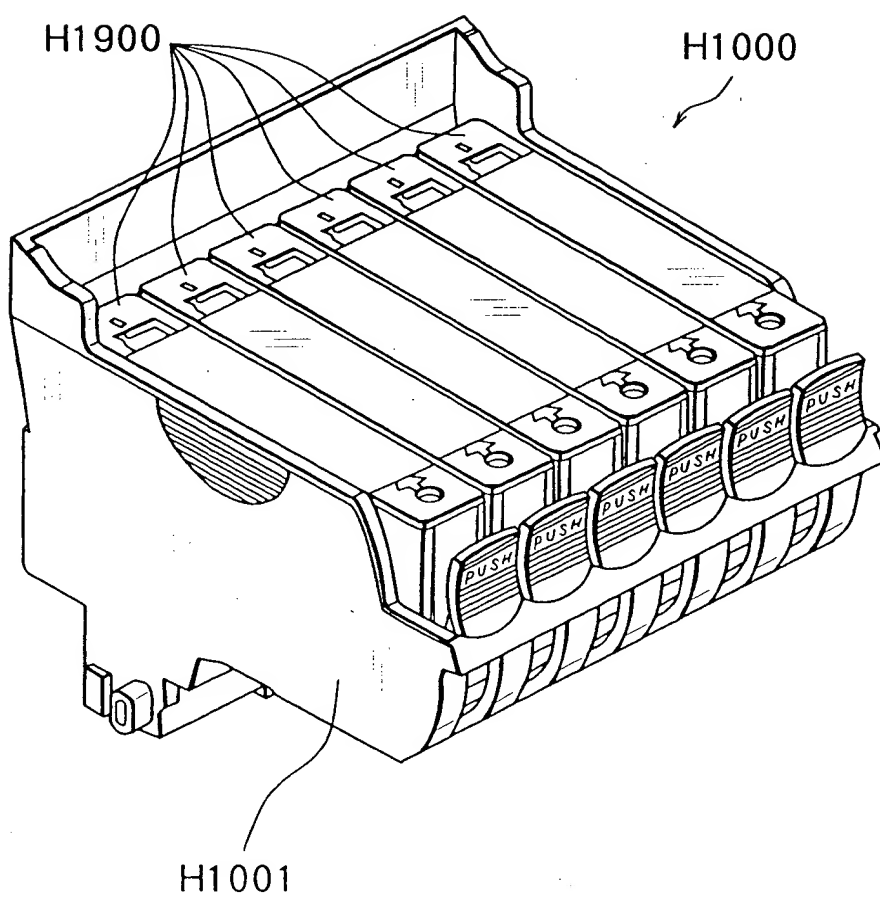


FIG. 3



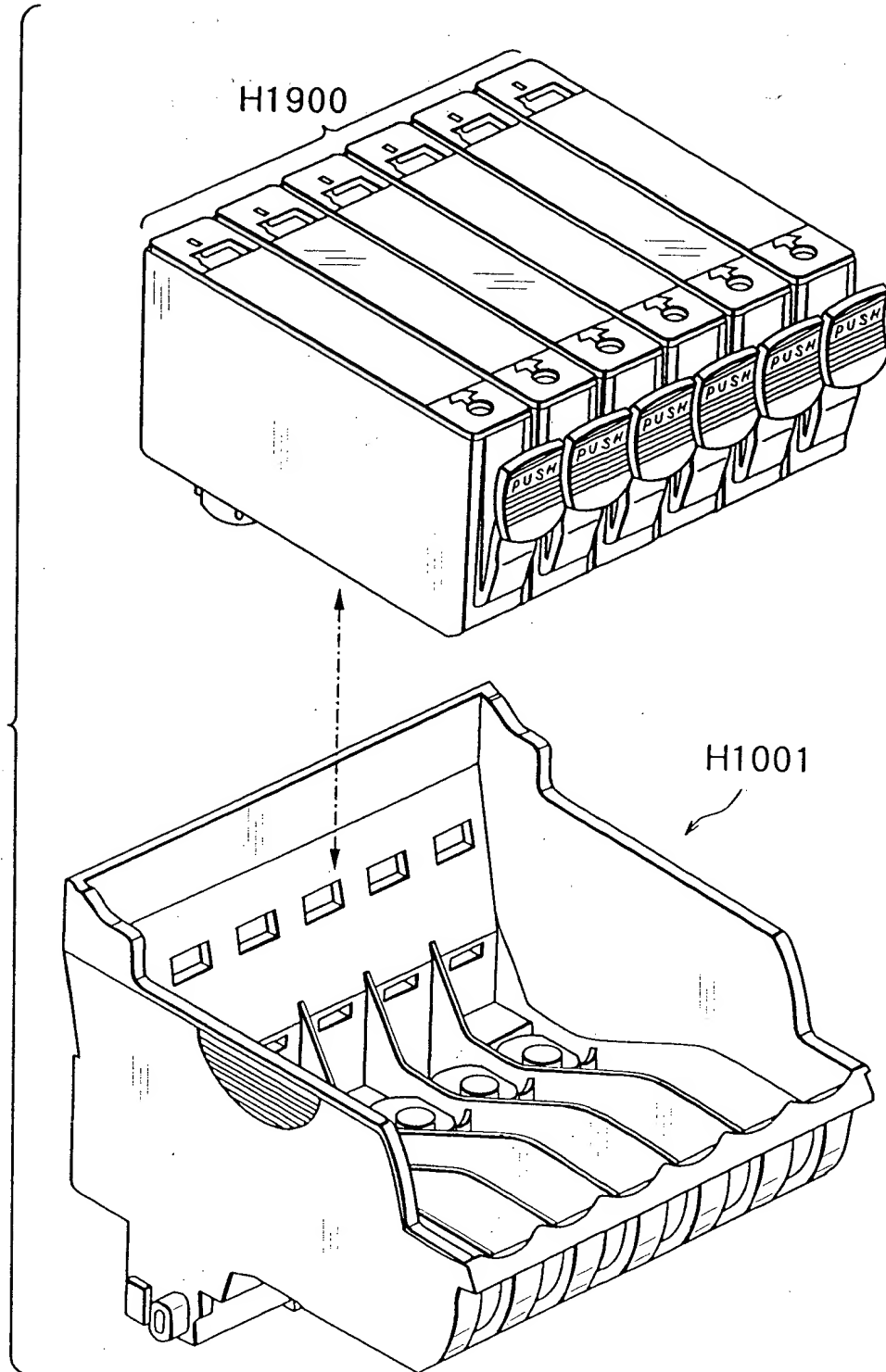
**FIG. 4**

FIG. 5

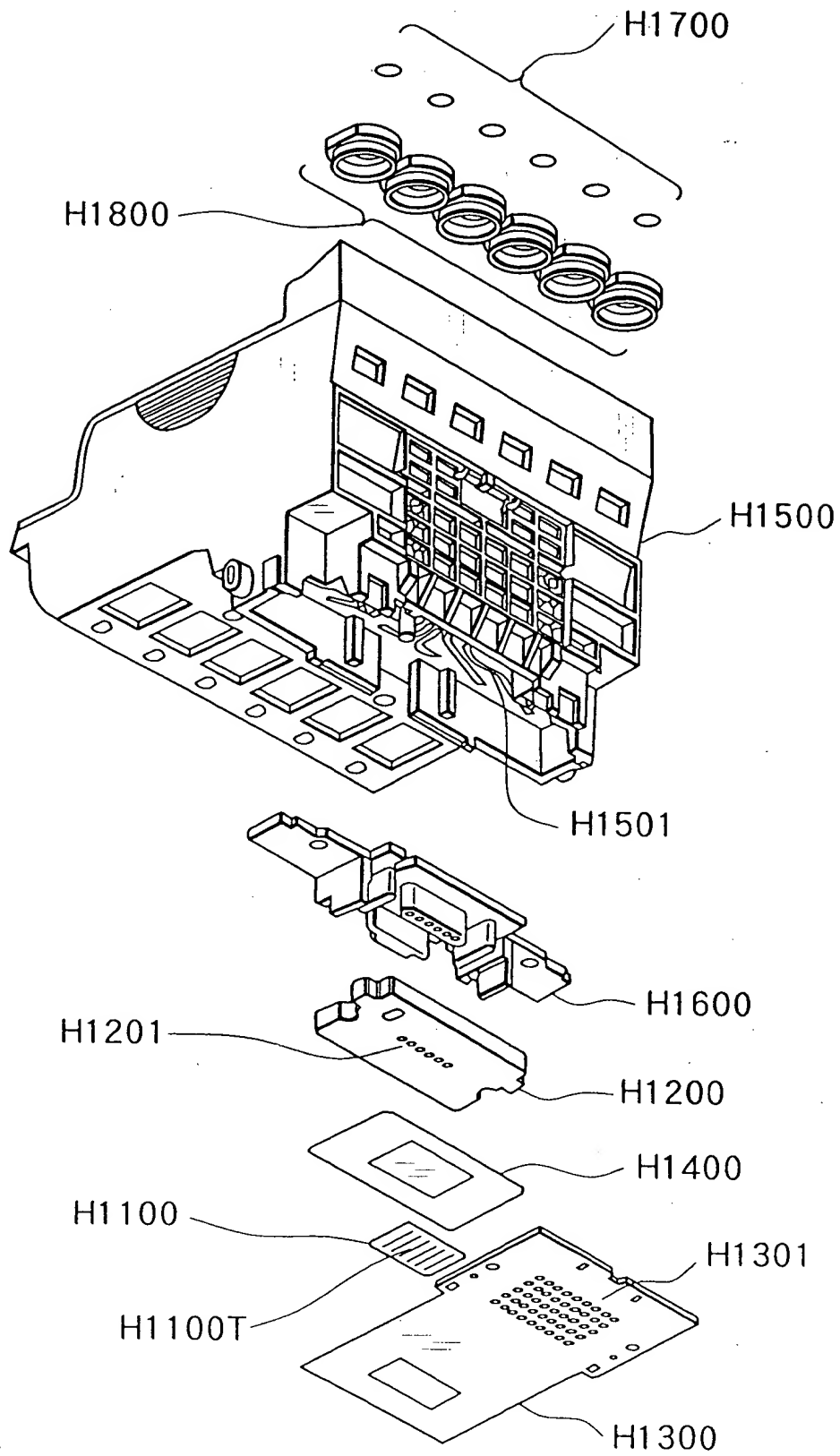


FIG. 6A

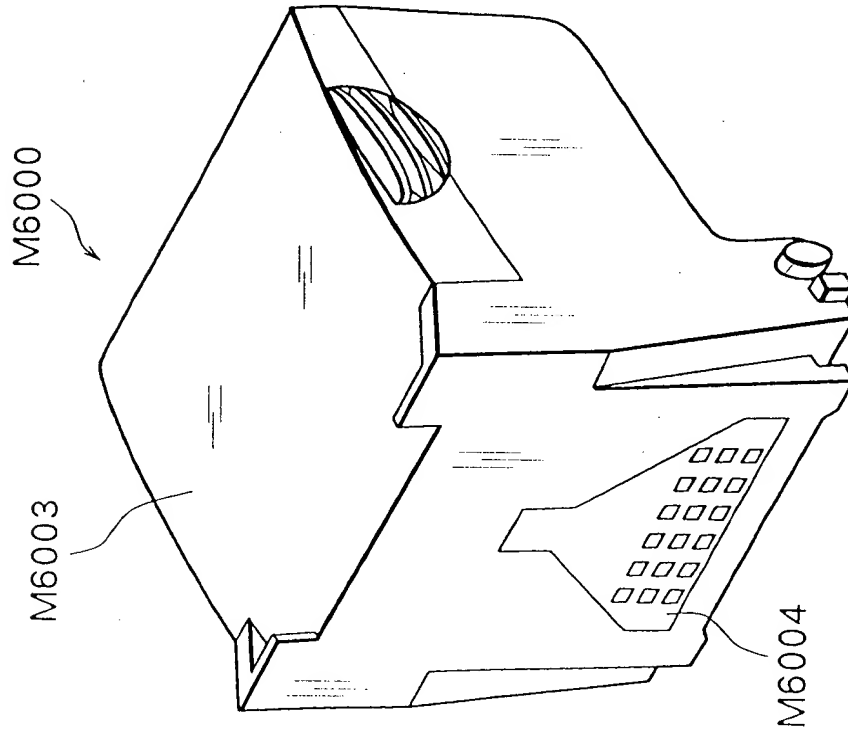


FIG. 6B

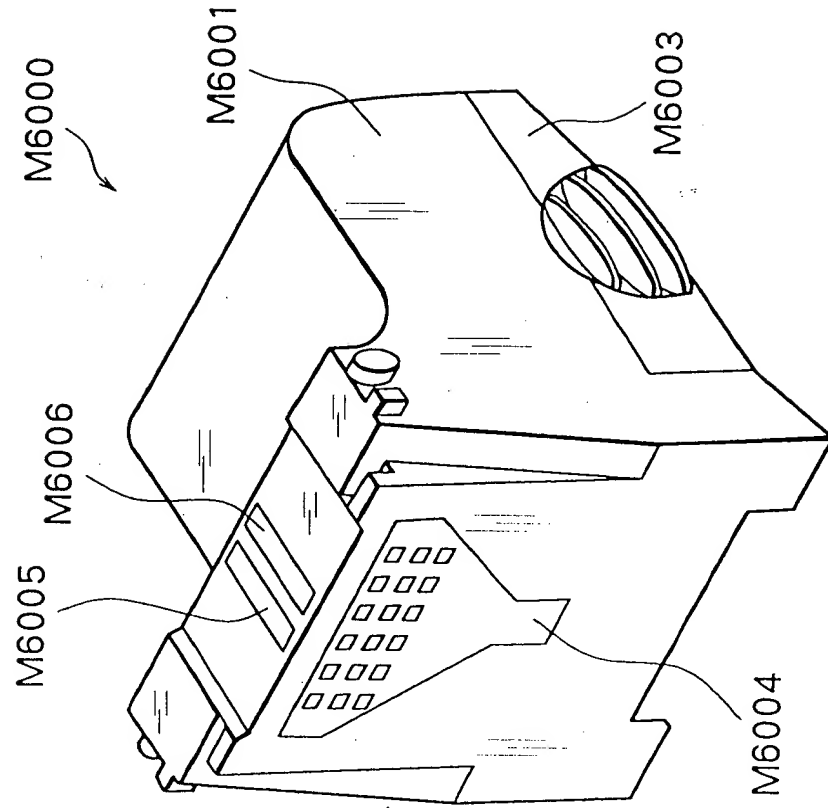
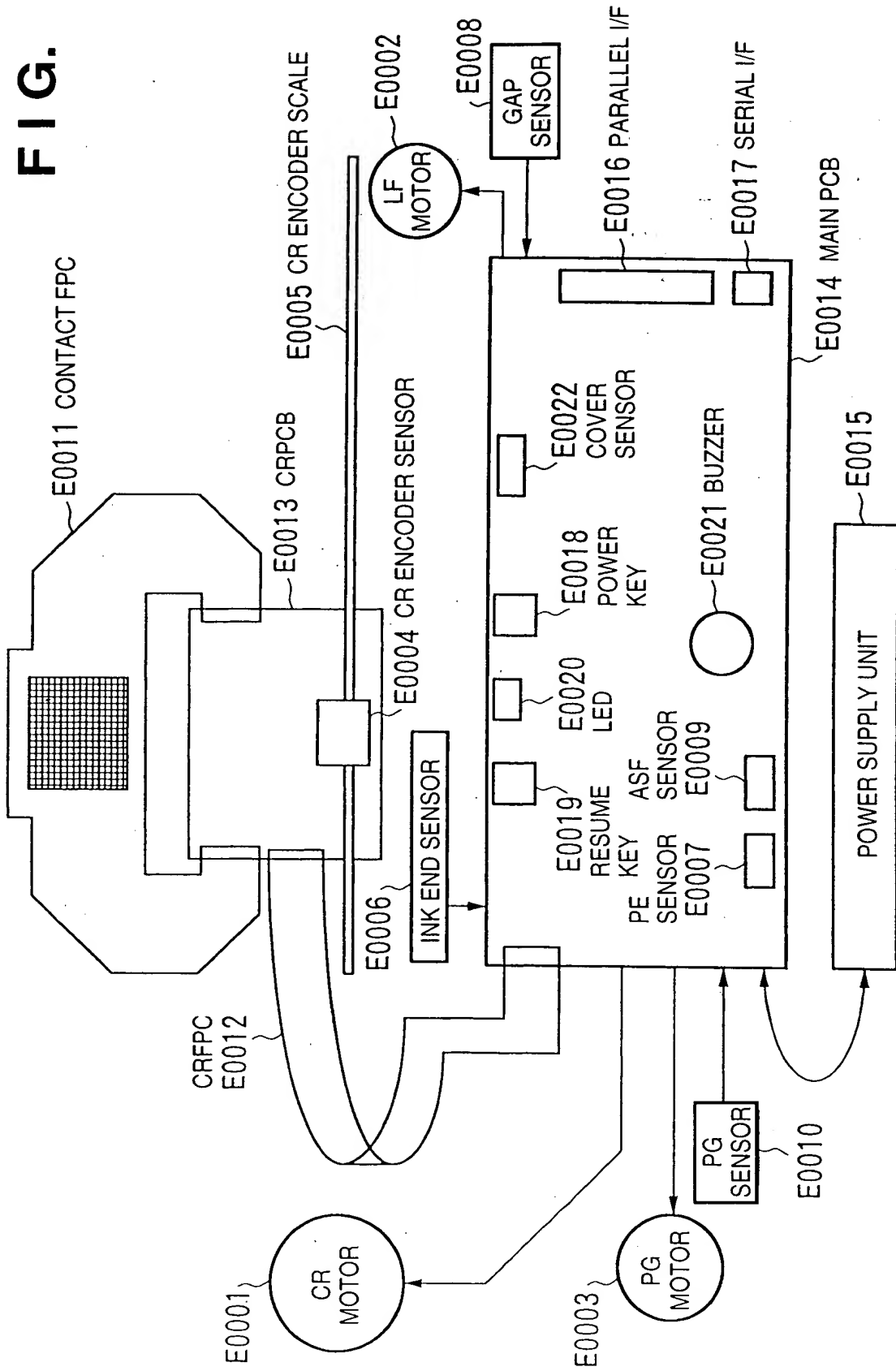


FIG. 7







9  
5  
1  
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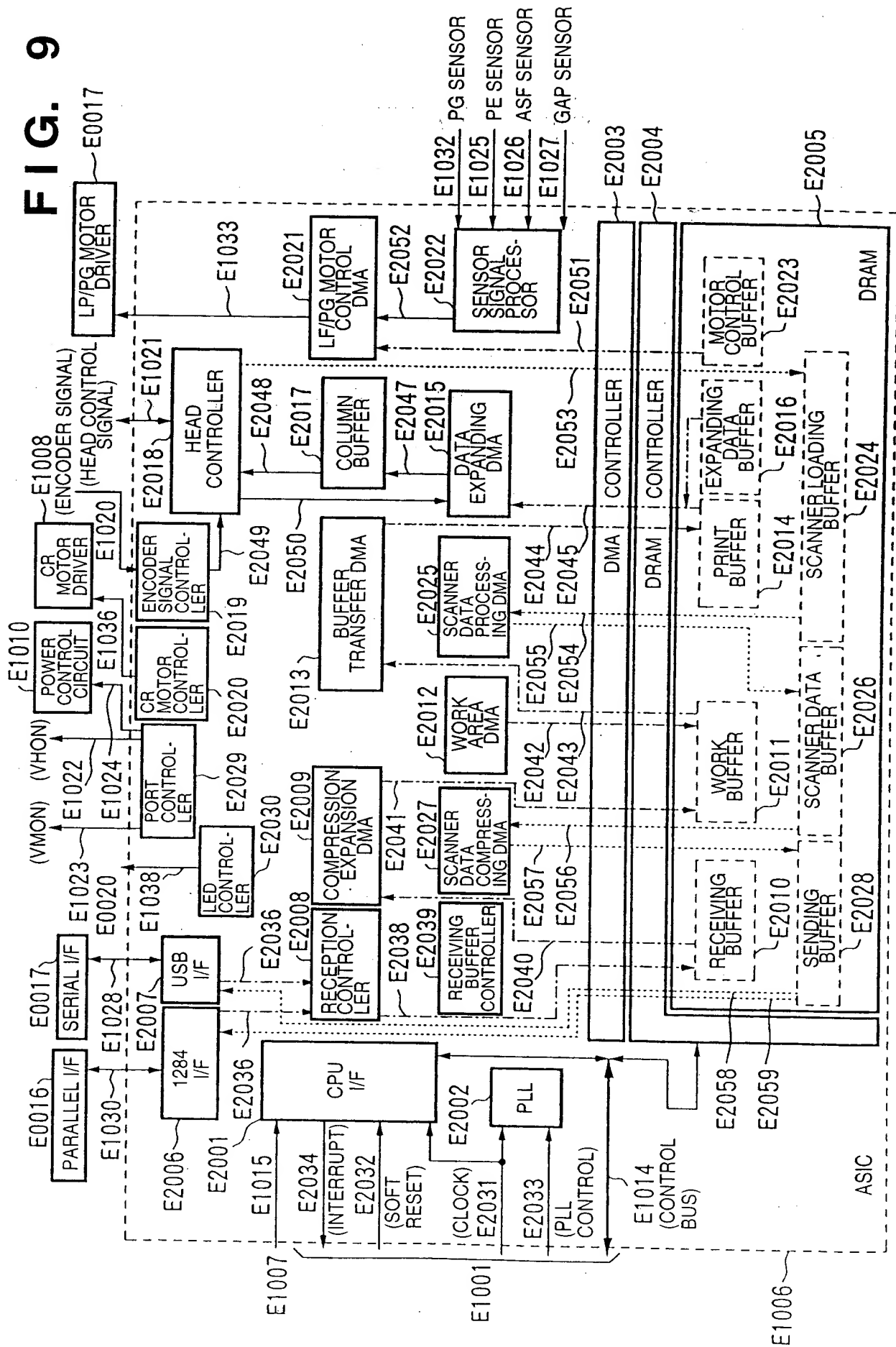
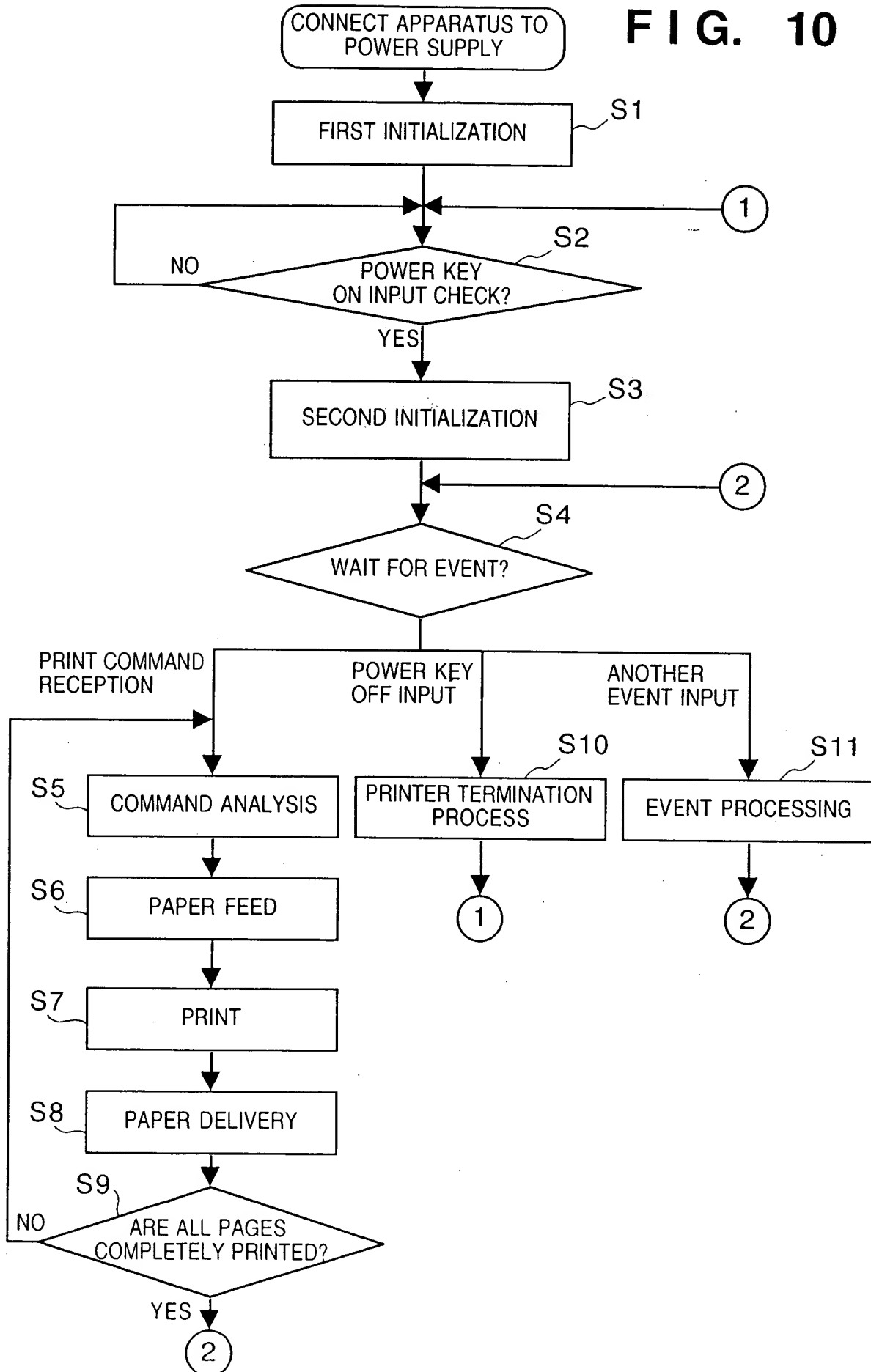


FIG. 10





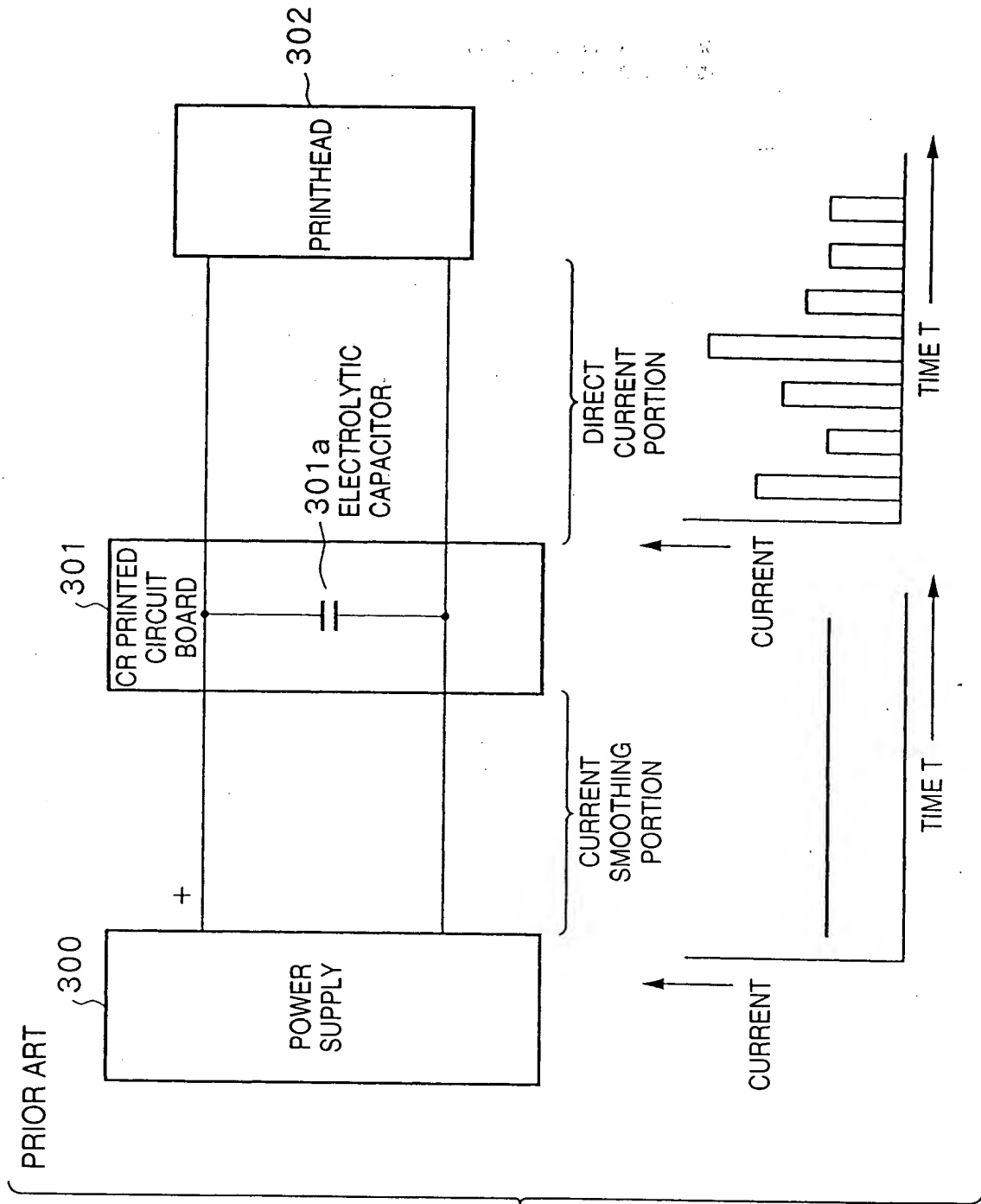
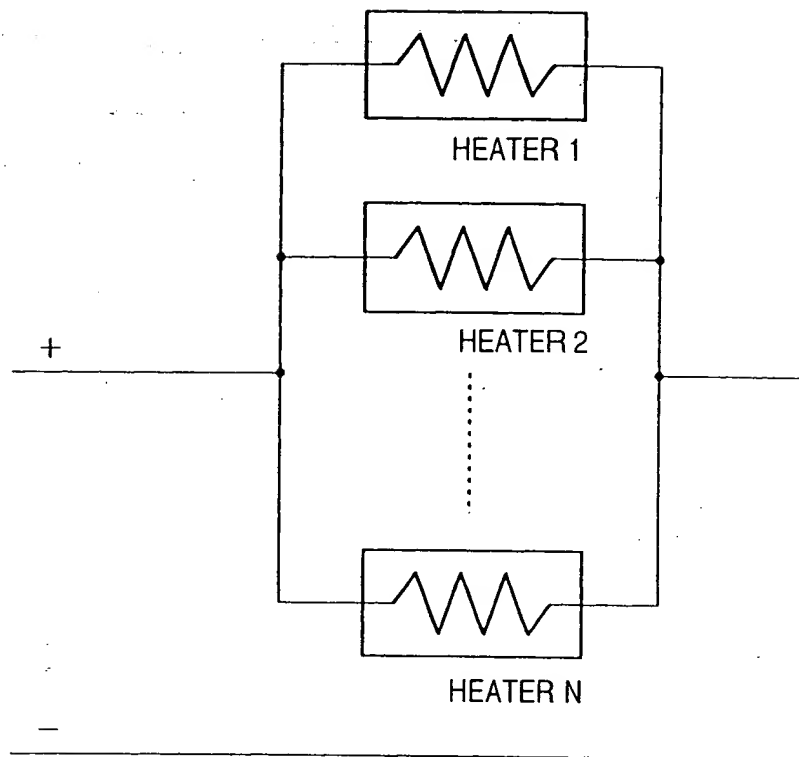


FIG. 13

1. **Introduction**  
 2. **Background**  
 3. **Methodology**  
 4. **Results**  
 5. **Discussion**  
 6. **Conclusion**  
 7. **References**  
 8. **Appendix**  
 9. **Index**  
 10. **Table of Contents**  
 11. **Abstract**  
 12. **Summary**  
 13. **Key Words**  
 14. **Keywords**  
 15. **Subject Headings**  
 16. **Classification**  
 17. **Indexing**  
 18. **Keywords**  
 19. **Subject Headings**  
 20. **Classification**  
 21. **Indexing**  
 22. **Keywords**  
 23. **Subject Headings**  
 24. **Classification**  
 25. **Indexing**  
 26. **Keywords**  
 27. **Subject Headings**  
 28. **Classification**  
 29. **Indexing**  
 30. **Keywords**  
 31. **Subject Headings**  
 32. **Classification**  
 33. **Indexing**  
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 35. **Subject Headings**  
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 247. **Subject Headings**  
 248. **Classification**  
 249. **Indexing**  
 250. **Keywords**  
 251. **Subject Headings**



## THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES

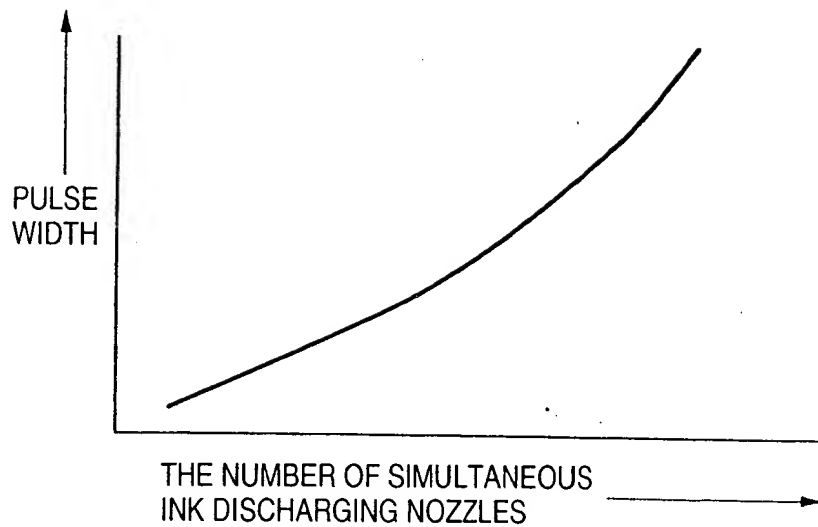


FIG. 16

HEATER RANK	TRON RANK	TEMPERATURE RANK	DRIVING PULSE WIDTH
1	1	~20°C	1.5
		~30°C	1.4
		~40°C	1.3
		~50°C	1.2
		50°C OR MORE	1.1
	2	~20°C	1.6
		~30°C	1.5
		~40°C	1.4
:	:	:	:
:	:	:	:
:	:	:	:
8	8	~20°C	2.9
		~30°C	2.8
		~40°C	2.7
		~50°C	2.6
		50°C OR MORE	2.4

FIG. 17

HEATER RANK	TrON RANK	TEMPERATURE RANK	THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES			
			0 ~ 7	~ 15	~ 23	~ 31
1	1	~20°C	1.2	1.3	1.4	1.5
		~30°C	1.1	1.2	1.3	1.4
		~40°C	1	1.1	1.2	1.3
		~50°C	0.9	1	1.1	1.2
		50°C OR MORE	0.8	0.9	1	1.1
	2	~20°C	1.3	1.4	1.5	1.6
		~30°C	1.2	1.3	1.4	1.5
		~40°C	1.1	1.2	1.3	1.4
:	:	:	:	:	:	:
:	:	:	:	:	:	:
:	:	:	:	:	:	:
8	8	~20°C	2.2	2.4	2.6	2.9
		~30°C	2.2	2.4	2.6	2.8
		~40°C	2.2	2.3	2.5	2.7
		~50°C	2	2.2	2.3	2.6
		50°C OR MORE	1.9	2.1	2.2	2.4

8×8×5=320



FIG. 18

HEATER RANK	TrON RANK	TEMPERATURE RANK	DRIVING PULSE No.
1	1	~20°C	5
		~30°C	4
		~40°C	3
		~50°C	2
		50°C OR MORE	1
	2	~20°C	6
		~30°C	5
		~40°C	4
:	:	:	:
:	:	:	:
:	:	:	:
8	8	~20°C	16
		~30°C	15
		~40°C	14
		~50°C	13
		50°C OR MORE	12

8×8×2=128







**FIG. 22**

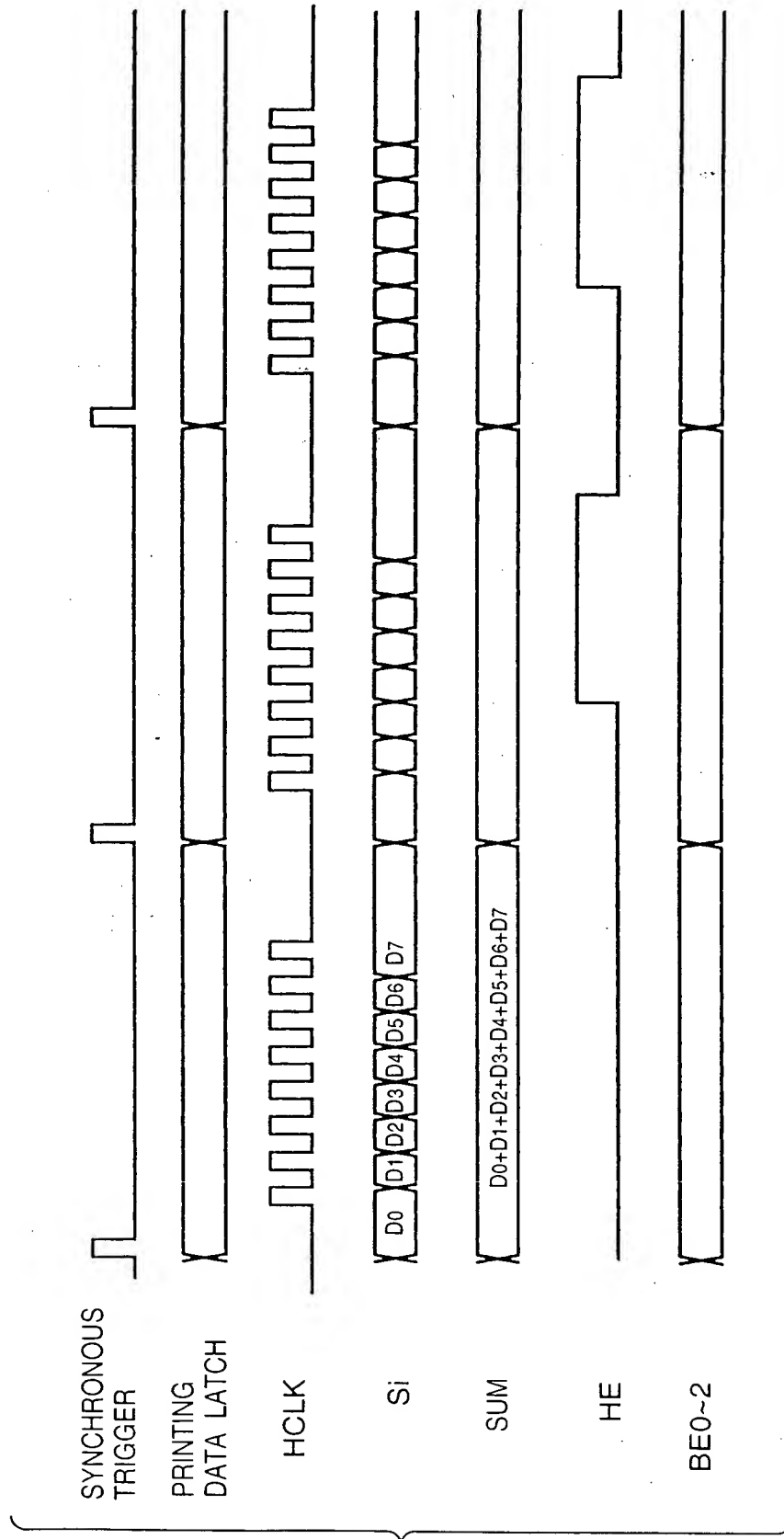


FIG. 23

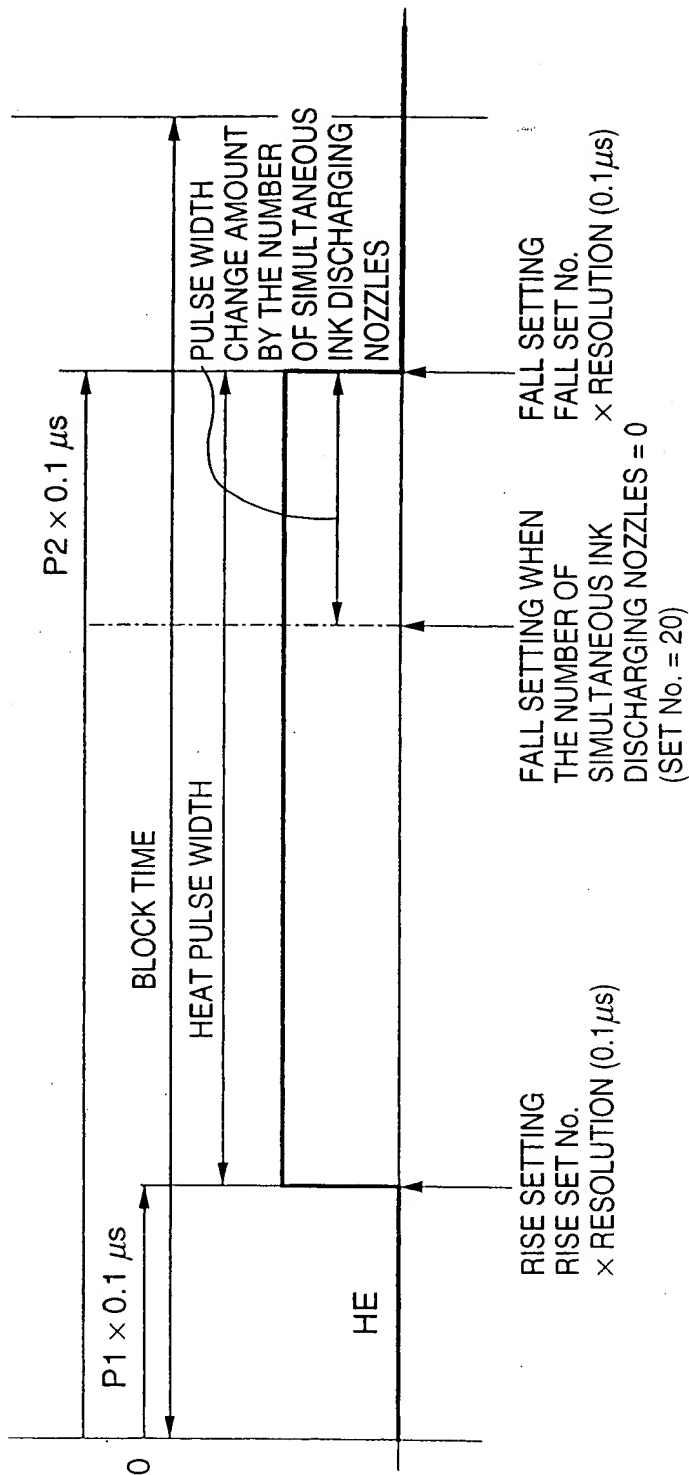


FIG. 24

HEAD ROM SET No. — PULSE WIDTH (AT 20 ~ 30℃)	
HEAD ROM SET No.	PULSE WIDTH
1	0.6
2	0.7
3	0.8
4	0.9
⋮	⋮
⋮	⋮
⋮	⋮
⋮	⋮

# FIG. 25

HEAD ROM SET No. — DRIVING PULSE No. CORRESPONDENCE TABLE

HEAD ROM SET No.	TEMPERATURE RANK				
	~20℃	~30℃	~40℃	~50℃	~50℃ OR MORE
4	5	4	3	2	1
5	6	5	4	3	2
6	7	6	5	4	3
7	8	7	7	5	4
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:

↑ NUMBER IS DRIVING PULSE No.



# FIG. 26

DRIVING PULSE No. — P1 SET VALUE

DRIVING PULSE No.	P1	PULSE WIDTH
1	14	0.6
2	13	0.7
3	12	0.8
4	11	0.9
⋮	⋮	⋮
⋮	⋮	⋮
⋮	⋮	⋮
⋮	⋮	⋮

FIG. 27

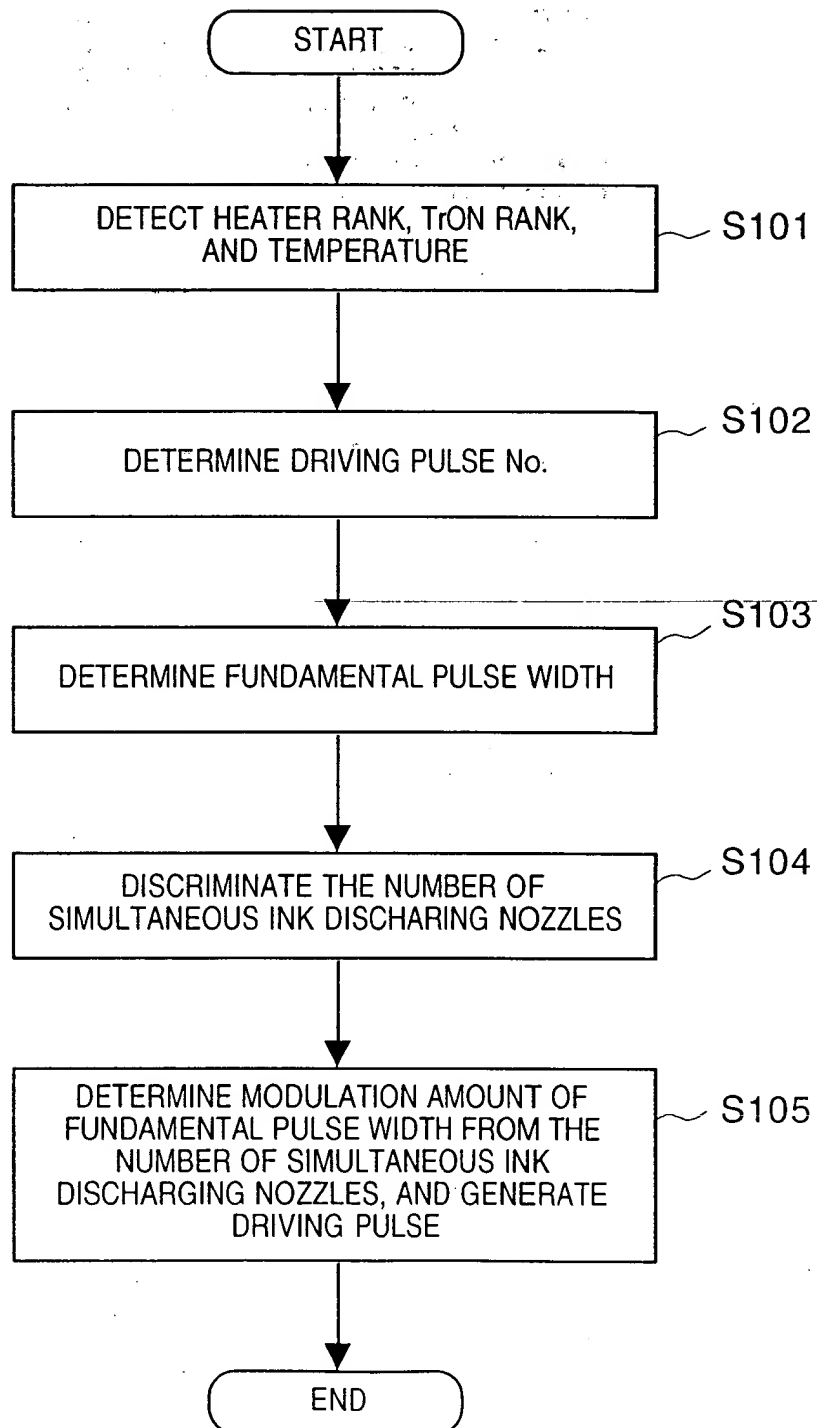
DRIVING PULSE No. — SIMULTANEOUS INK DISCHARGING PULSE No.

DRIVING PULSE No.	THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES			
	0~7	~15	~23	~32
1	0	3	6	9
2	0	3	6	9
3	0	3	7	9
4	0	4	7	10
:	:	:	:	:
:	:	:	:	:
:	:	:	:	:
:	:	:	:	:

↑ NUMBER IS SIMULTANEOUS DISCHARGING PULSE No.



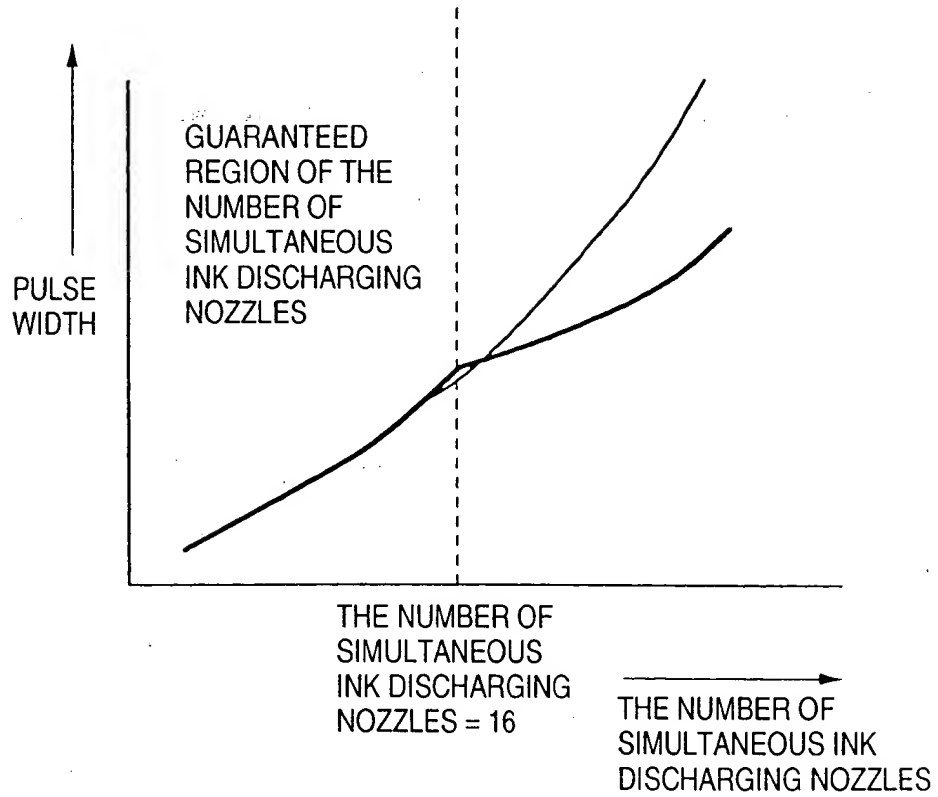
FIG. 29







**FIG. 32**



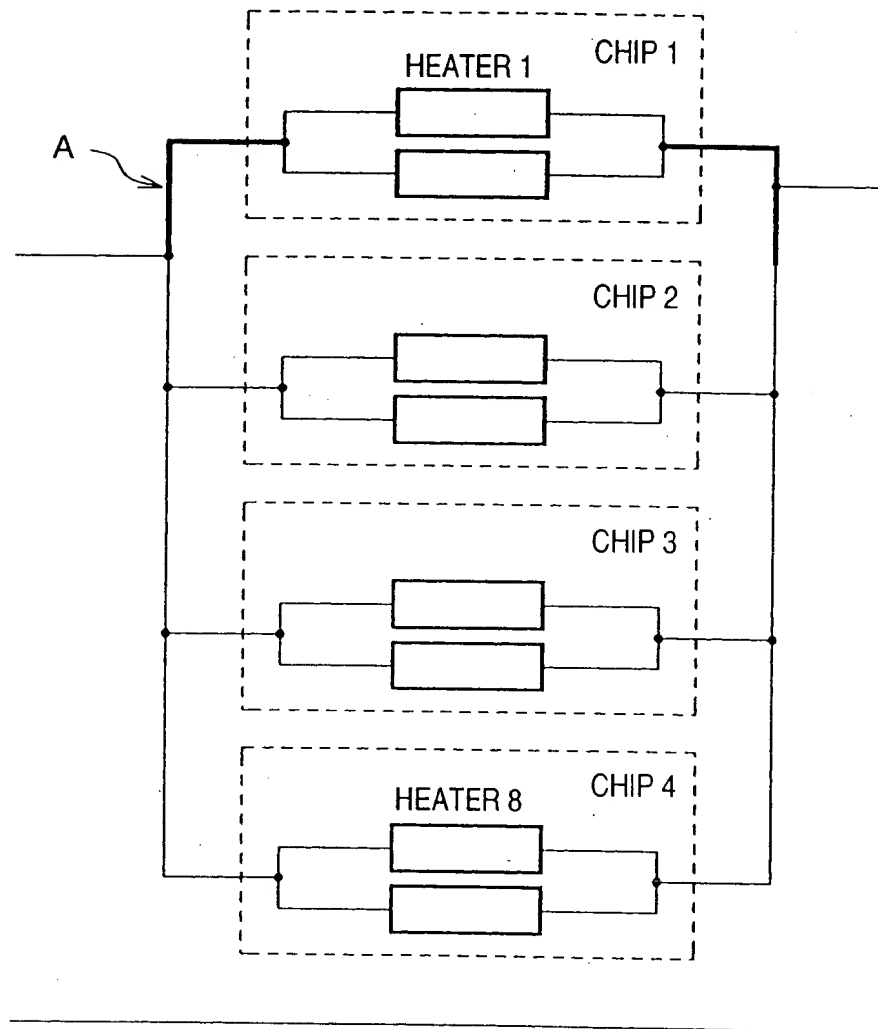
PULSE TABLE IN WHICH PULSE WIDTH IS NARROWED WHEN THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES IS 16 OR MORE **FIG. 33**

DRIVING PULSE No.	THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES			
	0~7	~15	~23	~32
1	0	0.1	0.1	0.2
2	0	0.1	0.2	0.2
3	0	0.1	0.2	0.3
4	0	0.1	0.2	0.3
5	0	0.1	0.2	0.3
6	0	0.1	0.2	0.3
7	0	0.1	0.2	0.3
8	0	0.2	0.2	0.3
9	0	0.1	0.3	0.3
10	0	0.1	0.3	0.3
11	0	0.2	0.2	0.3
12	0	0.2	0.3	0.4
13	0	0.2	0.3	0.4
14	0	0.2	0.3	0.4
15	0	0.2	0.3	0.5
16	0	0.2	0.3	0.5



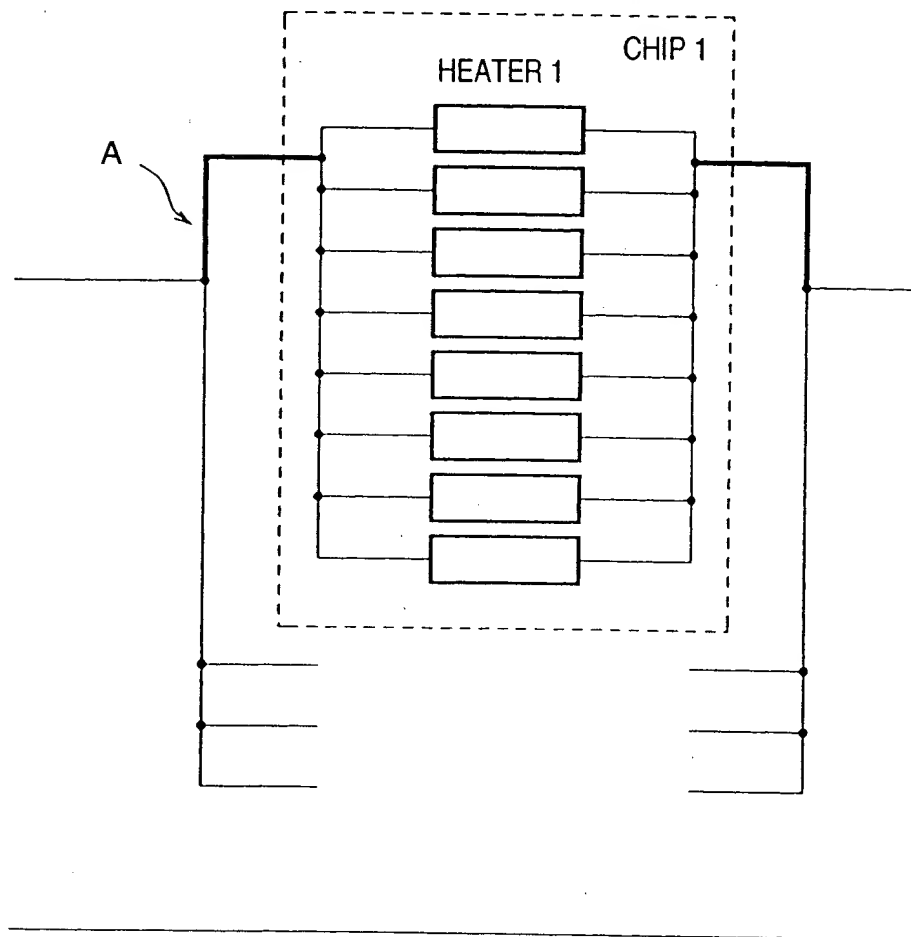
**FIG. 34**

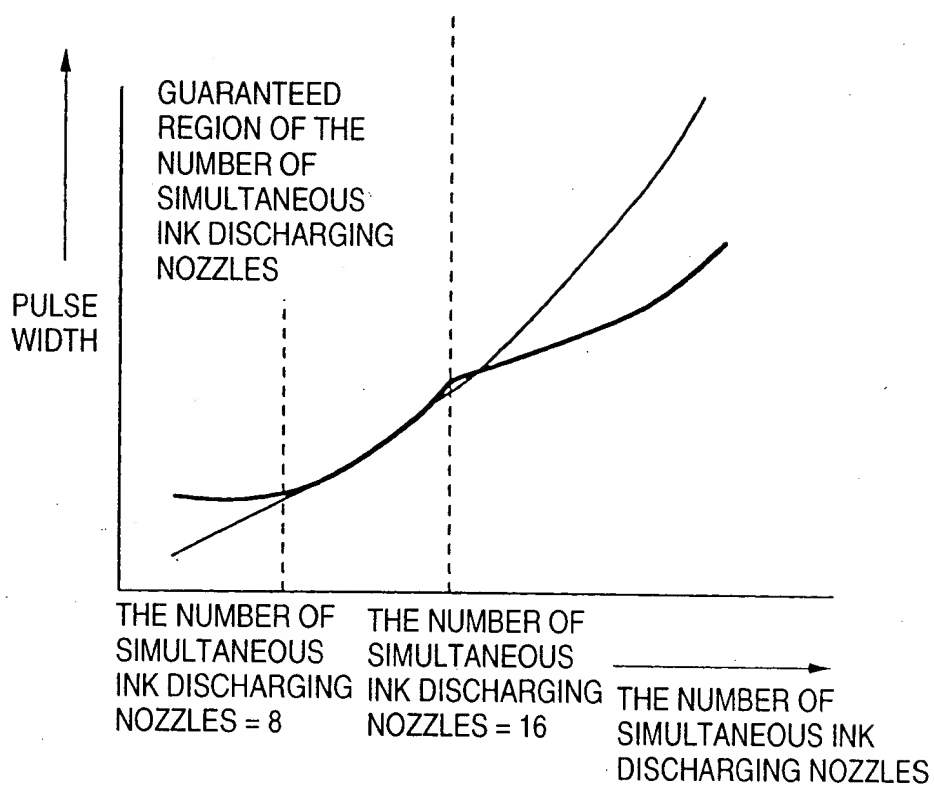
EXAMPLE IN WHICH THE NUMBER OF  
SIMULTANEOUS INK DISCHARGING NOZZLES  
= 8 IS UNIFORMLY DISTRIBUTED



**FIG. 35**

EXAMPLE IN WHICH THE NUMBER OF  
SIMULTANEOUS INK DISCHARGING NOZZLES  
= 8 IS CONCENTRATED TO ONE CHIP



**FIG. 36**

EXAMPLE IN WHICH PULSE WIDTH IS INCREASED WHEN THE NUMBER OF  
SIMULTANEOUS INK DISCHARGING NOZZLES IS 0 TO 7

DRIVING PULSE No.	THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES			
	0~7	~15	~23	~32
1	0.1	0.1	0.1	0.2
2	0.1	0.1	0.2	0.2
3	0.1	0.1	0.2	0.3
4	0.1	0.1	0.2	0.3
5	0.1	0.1	0.2	0.3
6	0.1	0.1	0.2	0.3
7	0.1	0.1	0.2	0.3
8	0.1	0.2	0.2	0.3
9	0.1	0.1	0.3	0.3
10	0.1	0.1	0.3	0.3
11	0.1	0.2	0.2	0.3
12	0.1	0.2	0.3	0.4
13	0.2	0.2	0.3	0.4
14	0.1	0.2	0.3	0.4
15	0.2	0.2	0.3	0.5
16	0.2	0.2	0.3	0.5

**FIG. 38**

SIMULTANEOUS INK DISCHARGING PULSE No. — P2 SET VALUE      SIMULTANEOUS INK DISCHARGING PULSE No. — P2 SET VALUE

SIMULTANEOUS INK DISCHARGING PULSE No.	P2	PULSE MODULATION WIDTH	SIMULTANEOUS INK DISCHARGING PULSE No.	P2	PULSE MODULATION WIDTH
0	20	0	0	21	0.1
1	21	0.1	1	22	0.2
2	22	0.2	2	23	0.3
3	23	0.3	3	24	0.4
4	24	0.4	4	25	0.5
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:
:	:	:	:	:	:

FOR PRINTING MODE A

FOR PRINTING MODE B

# FIG. 39

DRIVING PULSE No. — SIMULTANEOUS INK DISCHARGING PULSE No.

DRIVING PULSE No.	THE NUMBER OF SIMULTANEOUS INK DISCHARGING NOZZLES			
	0~7	~15	~23	~32
1	0	3	6	9
2	0	3	6	9
3	20	3	7	9
4	20	4	7	10
⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮
⋮	⋮	⋮	⋮	⋮

**FIG. 40**

SIMULTANEOUS INK DISCHARGING PULSE No. — P2 SET VALUE			
SIMULTANEOUS INK DISCHARGING PULSE No.	P2	PULSE MODULATION WIDTH	
0	20	0	
1	21	0.1	
2	22	0.2	
3	23	0.3	
4	24	0.4	
:	:	:	
:	:	:	
:	:	:	
20	20	0	

SIMULTANEOUS INK DISCHARGING PULSE No. — P2 SET VALUE			
SIMULTANEOUS INK DISCHARGING PULSE No.	P2	PULSE MODULATION WIDTH	
0	21	0.1	
1	22	0.2	
2	23	0.3	
3	24	0.4	
4	25	0.5	
:	:	:	
:	:	:	
:	:	:	
20	22	0.2	

FOR PRINTING MODE A

FOR PRINTING MODE B